

As discussed at the interview, it is the position of the Applicant that the teachings of the Yablonskiy reference are no different from the teachings of the Mills reference, which was previously used by the Examiner as a primary reference, and that is now being relied upon as a secondary reference by the Examiner. In both of those references, analysis and/or signal processing of the received or detected magnetic resonance signals (which are RF signals) is undertaken, but there is no teaching or suggestion in either of those references to determine, from that analysis or processing, a phase of the received magnetic resonance signal and, from that phase, to determine the field strength of the antenna-emitted radio frequency field, as explicitly required in each of independent claims 1 and 18 of the present application.

The teachings of the Mills reference on this point have already been thoroughly discussed by the Applicant in Applicant's previous response.

As to the Yablonskiy reference, which was cited for the first time in the final rejection, it is clear that the analysis of the received magnetic resonance (RF) signal in that reference is for the purpose for identifying microscopic inhomogeneities in the basic, static magnetic field (i.e., the B_0 field) rather than anything having to do with the antenna-emitted radio frequency field (the B_1 field). This is made clear by working backwards from the passage in the Yablonskiy reference that the Examiner relied on as a basis for substantiating the rejection of claim 1. Citing Yablonskiy at column 14, lines 52-59, the Examiner in the final rejection at page 3 stated that the Examiner considers the "average magnetic field for each voxel $B(x,y,z)$ " to be a measurement of the RF magnetic field strength emitted and detected by the RF coil 56, for each voxel. Applicant acknowledges that this passage in Yablonskiy only

generally refers to a "magnetic field," but Applicant submits it is clear that when Yablonskiy uses the term "magnetic field" in that passage, he is referring to the basic, static B_0 magnetic field. This is clear by virtue of equation [18] in the passage cited by the Examiner, which Yablonskiy states at column 14, lines 58-62 allows evaluation of the spatial distribution of the magnetic field inside of any given voxel, and goes on to state that the function $F(TE)$ describing macroscopic field inhomogeneities can then be calculated for each voxel.

Working backwards from this passage, Yablonskiy at column 6, lines 44-46 state that the function $F(TE)$ is a function of the gradient echo time TE , and accounts for macroscopic field inhomogeneities. The term "macroscopic," in turn, is discussed at column 6, lines 1-12 of the Yablonskiy reference, with respect to a "macroscopic scale." This macroscopic scale clearly refers to the basic magnetic field.

Therefore, neither in the passage cited by the Examiner, nor anywhere else in the Yablonskiy reference is the received magnetic resonance signal being analyzed to determine anything with respect to the B_1 field.

When this was pointed out to the Examiner at the interview, the Examiner stated she is required to give claims their broadest reasonable interpretation, and believes that the last method step of claim 1, and the last claim element of claim 18, do not necessarily preclude the inclusion of a determination of the field strength of the received magnetic resonance signal, when the field strength of the antenna-emitted radio frequency field is determined. As stated at the interview, Applicant does not agree that this is a reasonable interpretation of those claims, nor even a permissible interpretation, in view of the well-established claim interpretation rules involving antecedent basis. Once a claim term is initially described in a patent claim,

using the indefinite article "a," when that term is later used in the same claim, preceded by "the" or "said," the later-stated term must be given the same definition, meaning and scope as the initially-stated term. This is the reason for the rule requiring antecedent basis, as a means for effectuating the provisions of 35 U.S.C. §112, second paragraph. Applicants are frequently required by Examiners to amend the claim language to adhere to this rule, and therefore the reverse situation must govern the claim interpretation by the Examiner. The reverse situation is when, as here, the antecedent basis rule has clearly been followed (in fact, claims 1 and 18 were previously amended to adhere to that rule), the Examiner is not permitted to ignore the rule and interpret a claim in a manner wherein the Examiner does not give consistent meaning to the same term when that term is used throughout a patent claim.

In each of claims 1 and 18, it is explicitly stated that at least one radio frequency pulse is emitted from an antenna *to generate an antenna-emitted radio frequency field having a field strength*. This antenna-emitted radio frequency field is also explicitly stated to cause the examination subject in the radio frequency field to emit a magnetic resonance signal. Further in each of those claims, it is stated that a phase of the magnetic resonance signal is determined and, from that phase, the field strength *of said antenna emitted radio frequency field* is determined. By virtue of the use of the word "said" at this latter occurrence of this term in the claims, it is clear that the radio frequency field that is being referred to at the end of the claim is the same radio frequency field that was emitted by the antenna. Since that antenna-emitted radio frequency field was explicitly stated to *cause* the examination subject to emit a magnetic resonance signal, it is clear that the antenna-emitted radio

frequency field precedes the magnetic resonance signal in time, and is thus different from the magnetic resonance signal. Therefore, determining the field strength of the antenna-emitted radio frequency field has nothing whatsoever to do with the field of strength of the magnetic resonance signal, since those are defined in the claims as being two completely different signals.

As the Examiner's supervisor noted at the interview, if the Examiner is satisfied that the first time the phrase "antenna-emitted radio frequency field having a field strength" is used in claim 1 it cannot refer to the magnetic resonance signal (since it is explicitly stated to *cause* the magnetic resonance signal), then the Examiner must, according to the accepted rules of claim interpretation, interpret the later occurrence of that identical phrase to mean the field strength of the antenna-emitted radio frequency field, and not having anything to do with the field strength of the magnetic resonance signal.

Applicant therefore submits that the Yablonskiy reference does not disclose all of the elements of independent claims 1 and 18 as arranged and operating in those claims, and therefore does not anticipate either of those claims. For the same reasons, claims 2, 3, 5-8 and 11-17, which depend from Independent claim 1, are not anticipated by Yablonskiy, nor is claim 19, which depends from claim 18.

Since, as discussed above, the Mills reference provides no teachings beyond those of Yablonskiy, even if the Yablonskiy reference were modified in accordance with the teachings of Mills, the subject matter of claims 4, 9 and 10 still would not result. None of those dependent claims, therefore, would have been obvious under the provisions of 35 U.S.C. §103(a) based on the teachings of Yablonskiy and Mills.

All claims of the application are therefore submitted to be in condition for allowance, and early reconsideration of the application is respectfully requested.

Submitted by,

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